WE CLAIM

1. A suboptimal method for searching for a symbol sequence, comprising:

determining a channel impulse response;

sampling a received signal;

selecting at least one of the highest and/or most reliable impulse response values;

determining a reference signal using the at least one impulse response value and a symbol sequence assumed as transmitted;

determining differential terms corresponding to the selected impulse response values for the signal sample and the reference signal;

applying the determined differential terms to a symbol sequence transition metric for searching for a symbol sequence;

forming a survivor path by adding the symbol sequence provided by the transition metric to the survivor path formed so far.

2. A method according to claim 1, wherein at least one reference signal is determined using the selected impulse response value and at least one later impulse response value.

3. A method according to claim 1, wherein at least one reference signal is determined using only the selected impulse response value.

4. A method according to claim 1, wherein the number of differential terms for the transition metric is increased, if the impulse response comprises a plural number of high and/or most reliable values.

5. A method according to claim 1, wherein the number of differential terms for the transition metric is decreased, if the impulse response contains only some high and/or most reliable values or only one high and/or reliable value.

6. A method according to claim 1, wherein the highest possible number of differential terms for the transition metric is determined on the basis of the length of the channel memory.

7. A method according to claim 1, wherein the magnitude of the impulse response values is emphasized in the selection of differential terms for the transition metric.

8. A method according to claim 1, wherein the reliability of the impulse response values is emphasized in the selection of the differential terms for the transition metric.

9. A method according to claim 1, wherein the differential term illustrates the squared Euclidean distance between the received signal sample and the symbol sequence assumed as transmitted and convoluted with the impulse response values.

10. A method according to claim 1, wherein the differential term illustrates the squared Hamming distance between the received signal sample and the symbol sequence assumed as transmitted and convoluted with the impulse response values.

11. A method according to claim 1, wherein the differential term illustrates the correlation between the received signal sample and the symbol sequence assumed as transmitted and convoluted with the impulse response values.

12. A method according to claim 1, wherein the determined transition metric is added to the path metric formed so far.

13. Computer software according to claim 1, which comprises routines for executing the method steps.

14. A computer memory means according to claim 1, which comprises the computer software according to claim 13.

15. A receiver in which a symbol sequence is searched for;

the receiver comprises

means for determining a channel impulse response,

means for sampling a received signal;

means for selecting at least one of the highest and/or most reliable impulse response values;

means for determining a reference signal using the at least one impulse response value and a symbol sequence assumed as transmitted;

means for determining differential terms corresponding to the selected impulse response values for the signal sample and the reference signal;

means for using the determined differential terms in a transition metric for searching for a symbol sequence;

means for forming a survivor path by adding the symbol sequence provided by the transition metric to the survivor path formed so far.

16. A receiver according to claim 15, wherein at least one reference signal is determined using the selected impulse response value and at least one later impulse response value.

17. A receiver according to claim 15, wherein at least one reference signal is determined using only the selected impulse response value.

18. A receiver according to claim 15, wherein the number of differential terms for the transition metric is increased, if the impulse response comprises a plural number of high and/or most reliable values.

19. A receiver according to claim 15, wherein the number of differential terms for the transition metric is decreased, if the impulse response comprises only some high and/or most reliable values, or only one high and/or most reliable value.

20. A receiver according to claim 15, wherein the maximum number of differential terms for the transition metric is determined by the length of the channel memory.

21. A receiver according to claim 15, wherein the magnitude of the impulse response values is emphasized in the selection of differential terms for the transition metric.

22. A receiver according to claim 15, wherein the reliability of the impulse response values is emphasized in the selection of differential terms for the transition metric.

23. A receiver according to claim 15, wherein the differential term illustrates the squared Euclidean distance between the received signal sample and the symbol sequence assumed as transmitted and convoluted with the impulse response values.

24. A receiver according to claim 15, wherein the differential term illustrates the Hamming distance between the received signal sample and the symbol sequence assumed as transmitted and convoluted with the impulse response values.

25. A receiver according to claim 15, wherein the differential term illustrates the correlation between the received signal sample and the symbol sequence assumed as transmitted and convoluted with the impulse response values.

26. A receiver according to claim 15, wherein the determined transition metric is added to the path metric formed so far.